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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
ABOAGYE, MICHAEL	

ART UNIT	PAPER NUMBER
1793	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/522,189	FINK, STEVEN T.	
	Examiner	Art Unit	
	MICHAEL ABOAGYE	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10/13/2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27 and 34-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27 and 34-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities: claim 7 depend from it self. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 5, 7-10,15-18, 20-25, 27,36 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato (US Patent No. 5326404).

Regarding claim 1, Sato teaches viewing port for a process chamber, comprising: a viewing window (22, figure 1) to permit optical access to said process chamber (10, figure 1); a mounting (equated to the plasma chamber/housing 20, which includes three connection members) to couple said viewing window (22) to said process chamber (10); said mounting comprising a first connection member (segment connecting the window (22) and the window cleaning apparatus (30)) and a second connection member (segment connecting the window cleaning apparatus (30) and the process chamber (10)); and a viewing window cleaning apparatus (30) coupled to said mounting and disposed between said viewing window and said process chamber (see, the apparatus (30) coupled to said plasma chamber housing (20) or the mounting and

disposed between the viewing window (22) and the process chamber (10)), and configured to form a cleaning plasma in a cleaning plasma region of said mounting (see in figure 1, the plasma generated in the region (20) by the window cleaning apparatus (30)), said viewing window being coupled to a first side of the viewing window cleaning apparatus by said first connection member and said process chamber being coupled to an opposite side of the viewing window cleaning apparatus by said second connection member (note, the viewing window (22) and the process chamber (10) as illustrated in figure 1 are deposed at opposite sides of the window cleaning apparatus (30) (also see, column 3, lines 1-17)

With respect to the mounting, It should be pointed out that the mounting of Sato as illustrated in figure 1 includes 3 connecting members, however it has been held that The transitional phrase "comprising" is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Invitrogen Corp v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition 'comprising' in a method indicates that the claim is open-ended and allows for additional steps."); *Genentech, Inc. v. Chiron Corp.*, 112F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Cpmprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts").

Regarding claim 2, Sato teaches viewing port, wherein said viewing window cleaning apparatus comprises RF (28), and plasma source (see, the argon gas, figure 1 and column 3, lines 1-17). (Note though the RF source is connected through viewing window, it is functionally operable with the cleaning apparatus in generating plasma in the region 20).

Regarding claims 5 and 7, Sato teaches at least one array of magnets coupled to said mounting (see, the magnetic coils 24, disposed around said mounting (see, figure 1 and column 3, lines 1-17). Note the coil type constitutes an electromagnet.

Regarding claim 8, Sato teaches a gas injection system coupled to said cleaning plasma region (see, argon injection into the plasma forming region (20), figure 1).

Regarding claims 9 and 10, Sato teaches cleaning plasma etches by-products deposited on said viewing window through physical etching (note the plasma cleaning or removal of contaminates on the viewing window is conventionally know to include physical etching in particular when the gas injection comprises at least argon (see, figure 1 and column 3, lines 14-17).

Regarding claim 15, Sato teaches a viewing window supporting section configured to position said viewing window at a predetermined position relative to a position of the process chamber (note the examiner equates the wave guide 26 and/or the upper portions of the mounting 20 to said claimed supporting section, figure 1).

Regarding claim 16, Sato teaches a cleaning plasma region selected in front of the viewing window therefore the travel of bi-products or contaminants to viewing window is prevented or substantial reduced.

Regarding claim 17, Sato in figure 1 show gas injection under pressure into the cleaning plasma region, therefore the propagation of by-products in the direction of the viewing window would substantially be opposed in a similar way as claimed.

Regarding claims 18 and 20, Sato teaches at least one array of magnets coupled to said mounting (see, the magnetic coils 24, disposed around said mountain (see, figure 1 and column 3, lines 1-17). Note the coil type constitutes an electromagnet.

Regarding claim 21, a process chamber (10, figure 1), comprising a viewing port (22, figure 10 coupled to said process chamber, wherein said viewing port comprises: a viewing window (22, figure 1) to permit optical access to said process chamber (10, figure 1); a mounting (equated to the plasma chamber (20) housing which includes three connection members) to couple said viewing window (22) to said process chamber (10); said mounting comprising a first connection member (see, that segment connecting the window(22) and the window cleaning apparatus (30)) and a second connection member (see that segment connecting the window cleaning apparatus (30) and the process chamber (10)); and a viewing window cleaning apparatus (30) coupled to said mounting and disposed between said viewing window and said process chamber (see, the apparatus (30) coupled to said plasma chamber housing (20) or the mounting and disposed between the viewing window (22) and the process chamber (10)), and configured to form a cleaning plasma in a cleaning plasma region of said mounting (see in figure 1, the plasma generated in the region (20) by the window cleaning apparatus (30)), said viewing window being coupled to a first side of the viewing window cleaning apparatus by said first connection member and said process chamber being coupled to an opposite side of the viewing window cleaning apparatus by said second connection

member (note, the viewing window (22) and the process chamber (10) as illustrated in figure 1 are deposed at opposite sides of the window cleaning apparatus (30) (also see, column 3, lines 1-17)

With respect to the mounting, It should be pointed out that the mounting of Sato as illustrated in figure 1 includes 3 connecting members, however it has been held that The transitional phrase "comprising" is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Invitrogen Corp v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition 'comprising' in a method indicates that the claim is open-ended and allows for additional steps."); *Genentech, Inc. v. Chiron Corp.*, 112F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Cpmprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts").

Regarding claim 22, Sato teaches mounting further comprises a gas injection system coupled to said cleaning plasma region (see, the window cleaning apparatus (30), figure 1).

Regarding claims 23 and 24, Sato teaches viewing window cleaning apparatus comprises a RF source (28), and plasma generator (see, the argon gas, figure 1 and column 3, lines 1-17). (Note though the RF source is connected through viewing

window, it is functionally operable with the cleaning apparatus in generating plasma in the region 20).

Regarding claims 25 and 27, Sato teaches at least one array of magnets coupled to said mounting (see, the magnetic coils 24 that create magnetic field, disposed around said mountain (see, figure 1 and column 3, lines 1-17). Note the coil type constitutes an electromagnet.

Regarding claim 36, Sato teaches a mounting comprising: at least one array of magnets coupled to said mounting (see, the magnetic coils 24, disposed around said mounting (see, figure 1 and column 3, lines 1-17), which would be capable of reducing cross field transport between the plasma chamber and the viewing window; gas injection under pressure into the cleaning plasma region of the mounting, therefore the propagation of by-products entering the mounting from the process chamber and diffusing to the viewing window would substantially be opposed and therefore reduced; viewing window supporting section configured to position said viewing window at a predetermined position relative to a position of the process chamber (note the examiner equates the wave guide 26 and/or upper portions of mounting 20 to said claimed supporting section , see figure 1).

Regarding claim 39, similar rejection as in 36 above is relied upon, since the scope of claims 36 and 39 are identical.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 3, 4, 34, 35, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US Patent No. 5326404) as applied to claims 1 and 21 above.

Regarding claims 3, 35 and 38, Sato in figure 1 does show an RF source (plasma generator), but the illustration of an impedance match assembly operable with RF (plasma generator) source is absent, however it has been indicated an impedance match to counter the inherent reactive impedance component inherent within the plasma generating system (interpreted as a component known to be required in all conventional plasma generating system), (see applicant's specification para [0029]). Therefore selection of an impedance match assembly to be included in the plasma generating system (i.e. viewing window cleaning system) of Sato would have been within purview of one of ordinary skill in the art. The scope of claims 3, 35 and 38 are substantially identical.

Regarding claim 4, Sato teaches RF source for generating plasma, but silent on inductive coil, however RF source for generating plasma are know in the art to be one of capacitive and/or inductive. Selection of any one of these alternatives would have been within purview of one of ordinary skill in the art, since substituting one alternative for the other would have only yielded a predictable result.

Regarding claims 34 and 37, Sato teaches viewing window connection to the process chamber but silent on ISO-KF hardware. However ISO-KF hardware is known9 to be standard (therefore conventional) in plasma technology or systems (see, applicant's specification, para [0006]). Therefore selection of ISO-KF hardware for

connecting the connecting member to the wall of process chamber of Sato would have been within purview of one of ordinary skill in the art.

6. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US Patent No. 5326404) as applied to claim 1 above and further in view of Yokogawa et al. (US Patent No. 6629538).

Regarding claim 12, Sato fails to teach gas injection system that uses at least one of NF.sub.3, CF.sub.4, SF.sub.6, C.sub.2F.sub.6, CCl.sub.4, and C.sub.2Cl.sub.6.

Yokogawa et al. teaches as known in the art to use either argon or at least one of NF.sub.3, CF.sub.4, SF.sub.6, C.sub.2F.sub.6, CCl.sub.4, and C.sub.2Cl.sub.6. gases injection for generating plasma (see, Yokogawa et al. column 8, lines 40-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Sato to use at least one of NF.sub.3, CF.sub.4, SF.sub.6, C.sub.2F.sub.6, CCl.sub.4, and C.sub.2Cl.sub.6. for generating plasma as taught by Yokogawa et al. since argon and the individual claimed gases a are known alternative plasma forming gases, therefore substituting one alternative for the other would have only yielded a predictable result.

Regarding claim 14, Sato teaches forming plasma with argon, and Yokogawa et al. teaches forming plasma by gas injection system provides at least one of argon, krypton, xenon and at least one of NF.sub.3, CF.sub.3, SF.sub.6, C.sub.2F.sub.9, CCl.sub.4, and C.sub.2Cl.sub.6. (See, Yokogawa et al. column 8, lines 40-65). The combination of Sato and Yokogawa et al., therefore meet the claimed limitation.

Regarding claims 11, and 13, Sato exclusively teach physical etching, the combination of Sato and Yokogawa et al. are silent on chemical etching, however teaches all the group of gases recited in the claims responsible for chemical etching. It is therefore the examiner's position that the system of Sato as modify by Yokogawa et al. is capable of cleaning the viewing window by chemical etching.

7. Claims 6,19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US Patent No. 5326404) as applied to claim 1 and 21 above and further in view of Newcomb et al. (US Patent No. 6372098).

Sato teaches a system comprising an array of electromagnet, but fails to teach permanent magnet.

Newcomb et al. teaches as known for plasma generating system to comprise magnets for controlling the motion of ions, wherein said magnets are selected from one or electromagnet and permanent magnet (see, Newcomb et al., column 1, lines 35-45).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Sato to use permanent magnet as taught by Newcomb et al. since electromagnet and permanent magnet are known alternative use on plasma generating systems for controlling the motion of ions, hence substituting one variant for the other would have only yielded a predictable result.

Response to Arguments

8. Applicant's arguments with respect to claims 1-27 and 34-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

910. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL ABOAGYE whose telephone number is (571)272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. A./
Examiner, Art Unit 1793

/Jessica L. Ward/
Supervisory Patent Examiner, Art Unit 1793